What is Python?

➤ Python is high-level-programing language. It is essay to learn& work.
➤ It is Used for AI to train & build the AI Based Projects.
➤ Python is a interpreted and Dynamic Language i.e the code will execute line-by-line.
➤ Contains "Simple Syntax" to build the code.

Why need to learn Python?

• Used in many areas like: **Data analysis, Web development& Automation, AL&ML, Cybersecurity**
• In high demand in the job market
• Large community and resources available.

Where you can use python in real world technology?

python's versatility, simplicity, and large community make it a popular choice for a wide range of applications.

1. Google

2. Facebook

3. Instagram

4. Netflix

5. Dropbox

6. Reddit

7. Pinterest

8. NASA

9. IBM ... etc.

What is difference between Python & other languages?

• Easy to Learn: Python is simpler and more readable than many languages, like Java or C++.
• Faster Development: Python's syntax and nature make it ideal for rapid prototyping and development, unlike languages like C or Assembly.
• More Versatile: Python can be used for web development, data analysis, AI, and more, whereas languages like SQL are specialized for databases

- Less Code: Python requires less code than languages like Java or C# to achieve the same results.

Data:

Data refers to facts, figures, and information that are collected, stored, and used for various purposes. It can be in the form of numbers, text, images, audio, or video.

Data types in Python?

Primitive Data Types in Python:

Primitive data types are basic and hold a single value and which can't be changed.

1. Integers (int): whole numbers, e.g., 1, 2, 3

2. Floats (float): decimal numbers, e.g., 3.14, -0.5

3. Strings (str): sequences of characters, e.g., "hello", 'hello'

4. Boolean (bool): true or false values

Non-Primitive Data Types in Python:

Non-primitive data types are complex and can hold multiple values, which can be changed.

1. Lists (list): ordered collections of items, e.g., [1, 2, 3], ["a", "b", "c"]

2. Tuples (tuple): ordered, immutable collections of items, e.g., (1, 2, 3), ("a", "b", "c")

3. Dictionaries (dict): unordered collections of key-value pairs, e.g., {"name": "John", "age": 30}

4. Sets (set): unordered collections of unique items, e.g., {1, 2, 3}, {"a", "b", "c"}.

Variable in python?

A variable is a name given to a value. In Python, variables are used to store and manipulate data.

Example:

x = 5-> assign integer value.

y = "hello" -> assign string value.

x = 10 -> reassign x to new value.

Example For Data Types in Python:

```
a=5
b=8.9
c="nicky"
d=True
print(type(a))
print(type(b))
print(type(c))
print(type(d))
```

```
<class 'int'>
<class 'float'>
<class 'str'>
<class 'bool'>
```

Example for variable or assigning value:

```
a=8
b=9
print('value of A:',a)
print('value of B:',b)
```

```
value of A: 8
value of B: 9
```

Example of printing student details:

```
sno=1
name='nicky'

gen='M'
ht=5.2
print('student number:',sno)
```

```
print('student name:',name)
print('student gender:',gen)
print('student height:',ht)
```

student number: 1

student name: nicky

student gender: M

student height: 5.2